

PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE INSTALLATION OF LED COUNTDOWN PEDESTRIAN SIGNAL HEADS, APS PUSHBUTTONS AND SIGNS AT THE INTERSECTION OF MD 26 (LIBERTY ROAD) AT ST. LUKES ROAD AND KING JAMES CIRCLE. NON-INVASIVE MICROLOOP PROBES WILL BE INSTALLED FOR THE EAST AND WEST APPROACHES. MD 26 IS ASSUMED TO RUN IN A EAST-WEST DIRECTION.

INTERSECTION OPERATION

THIS INTERSECTION CURRENTLY OPERATES IN A NEMA SIX-PHASE FULL-TRAFFIC-ACTUATED MODE WITH CONCURRENT PEDESTRIAN PHASES FOR THE NORTH AND SOUTH LEGS AND AN ALTERNATE PEDESTRIAN PHASE FOR THE WEST LEG OF THE INTERSECTION. LEFT TURNS FOR ALL EASTBOUND AND WESTBOUND APPROACHES OPERATE IN EXCLUSIVE-PERMISSIVE PHASING.

CONTROLLER REQUIREMENTS

THE EXISTING FULL-TRAFFIC-ACTUATED EIGHT PHASE TRAFFIC SIGNAL CONTROLLER HOUSED IN A BASE MOUNTED CABINET SHALL REMAIN. A 2-WIRE APS CENTRAL CONTROL UNIT SHALL BE FURNISHED BY THE CONTRACTOR AND INSTALL BY SHA.

GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY ALL PROPOSED POLE LOCATIONS PRIOR TO INSTALLATION. ALL LOCATIONS SHALL BE APPROVED BY THE ENGINEER BEFORE INSTALLATION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TERMINATING ALL SIGNAL CABLE TO THE APPROPRIATE TERMINALS AND PROPERLY LABELING EACH CABLE.
3. ALL UNUSED CABLE SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.
4. UNDERGROUND UTILITIES SHOWN ON THESE PLANS ARE SCHEMATIC ONLY AND MAY NOT BE COMPLETE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING "MISS UTILITY" PRIOR TO CONSTRUCTION SO THAT ALL UTILITIES MAY BE LOCATED IN THE FIELD. IF THE CONTRACTOR PERCEIVES THAT A CONFLICT BETWEEN THE UTILITIES AND THE TRAFFIC SIGNAL WILL OCCUR, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IMMEDIATELY SO THAT THE CONFLICT MAY BE RESOLVED.
5. ALL PEDESTAL FOUNDATION TOPS SHALL BE INSTALLED FLUSH WITH FINAL SIDEWALK GRADE.
6. ACCESSIBLE PEDESTRIAN CONTROL EQUIPMENT SHALL BE DELIVERED TO THE SHA SIGNAL SHOP FOR TESTING AND PROGRAMMING PRIOR TO INSTALLATION. CONTACT MR. EDWARD RODENHIZER AT 410-787-7652 TO COORDINATE.
7. LOCATION OF ACCESSIBLE PEDESTRIAN SIGNAL PUSHBUTTONS MUST MEET LOCATION REQUIREMENTS OF MUTCD SECTION 4E.09 AND FIGURE 4E.2 AND THE NCHRP PUBLICATION, "ACCESSIBLE PEDESTRIAN SIGNALS: GUIDE TO BEST PRACTICE." IF NOT MET, THE CONTRACTOR IS TO STOP WORK ON PUSHBUTTON LOCATIONS UNTIL A DESIGN WAIVER IS OBTAINED, APPROVED BY THE DIRECTOR, OFFICE OF TRAFFIC AND SAFETY.
8. PUSHBUTTONS ARE TO BE LOCATED SO THAT THEY CAN BE ACTIVATED BY A PERSON IN A WHEELCHAIR REACHING LESS THAN 18" FROM A 60" X 60" LEVEL LANDING AREA WITH A CROSS SLOPE OF LESS THAN OR EQUAL TO 2%.
9. THE 10' SEPARATION BETWEEN PUSHBUTTONS IS TO BE MEASURED FROM FACE OF PUSHBUTTON TO FACE OF PUSHBUTTON, NOT CENTER OF POLE TO CENTER OF POLE.
10. PUSHBUTTON ARROWS AND SIGNS ARE TO BE ORIENTED PARALLEL TO THE CROSSING FOR WHICH THEY ARE INTENDED.
11. THE CONTRACTOR SHALL CAP AND ABANDON CONDUIT FEEDING SIGNAL EQUIPMENT THAT IS REMOVED.
12. IN LOCATIONS WHERE SLOTTED CONDUIT IS SPECIFIED, BORED CONDUIT MAY BE USED AS AN ALTERNATE, AS APPROVED BY THE ENGINEER. HOWEVER, NO ADDITIONAL COMPENSATION WILL BE PROVIDED TO THE CONTRACTOR.

PHASING CHART

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	23
PHASE 1 AND 5	←G-←G-	R	R	←G-←G-	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW	FL/RSA
1 AND 5 CHANGE TO 1 AND 6, 2 AND 5, OR 2 AND 6																		
PHASE 1 AND 6	←G-←G-	G	G	←R-←R-	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW	SA
1 AND 6 CHANGE	←Y-←Y-	G	G	←R-←R-	R	R	R	R	R	R	R	R	R	DW	DW	DW	DW	SA
PHASE 2 AND 5	←R-←R-	R	R	←G-←G-	G	G	R	R	R	R	R	R	R	DW	DW	DW	DW	FL/RSA
2 AND 5 CHANGE	←R-←R-	R	R	←Y-←Y-	G	G	R	R	R	R	R	R	R	DW	DW	DW	DW	FL/RSA
PHASE 2 AND 6	←R-←R-	G	G	←R-←R-	G	G	R	R	R	R	R	R	R	WK	WK	DW	DW	SA
PED CLEARANCE	←R-←R-	G	G	←R-←R-	G	G	R	R	R	R	R	R	R	FL/DW	FL/DW	DW	DW	SA
2 AND 6 CHANGE	←R-←R-	Y	Y	←R-←R-	Y	Y	R	R	R	R	R	R	R	DW	DW	DW	DW	SA
PHASE 4 AND 8	←R-←R-	R	R	←R-←R-	R	R	G	G	G	G	G	G	G	DW	DW	DW	DW	FL/RSA
4 AND 8 CHANGE	←R-←R-	R	R	←R-←R-	R	R	Y	Y	Y	Y	Y	Y	Y	DW	DW	DW	DW	FL/RSA
PHASE 4 AND 8 ALT	←R-←R-	R	R	←R-←R-	R	R	G	G	G	G	G	G	G	DW	DW	WK	WK	FL/RSA
PED CLEARANCE	←R-←R-	R	R	←R-←R-	R	R	G	G	G	G	G	G	G	DW	DW	FL/DW	FL/DW	FL/RSA
4 AND 8 ALT CHANGE	←R-←R-	R	R	←R-←R-	R	R	Y	Y	Y	Y	Y	Y	Y	DW	DW	DW	DW	FL/RSA
FLASHING OPERATION	FL/←R-←R-	FL/←R-	FL/YFL/Y	FL/←R-←R-	FL/←R-	FL/YFL/YFL/RFL/RFL/RFL/RFL/R	DARK	DARK	DARK	DARK	DARK	DARK	DARK	DARK	DARK	DARK	DARK	SA

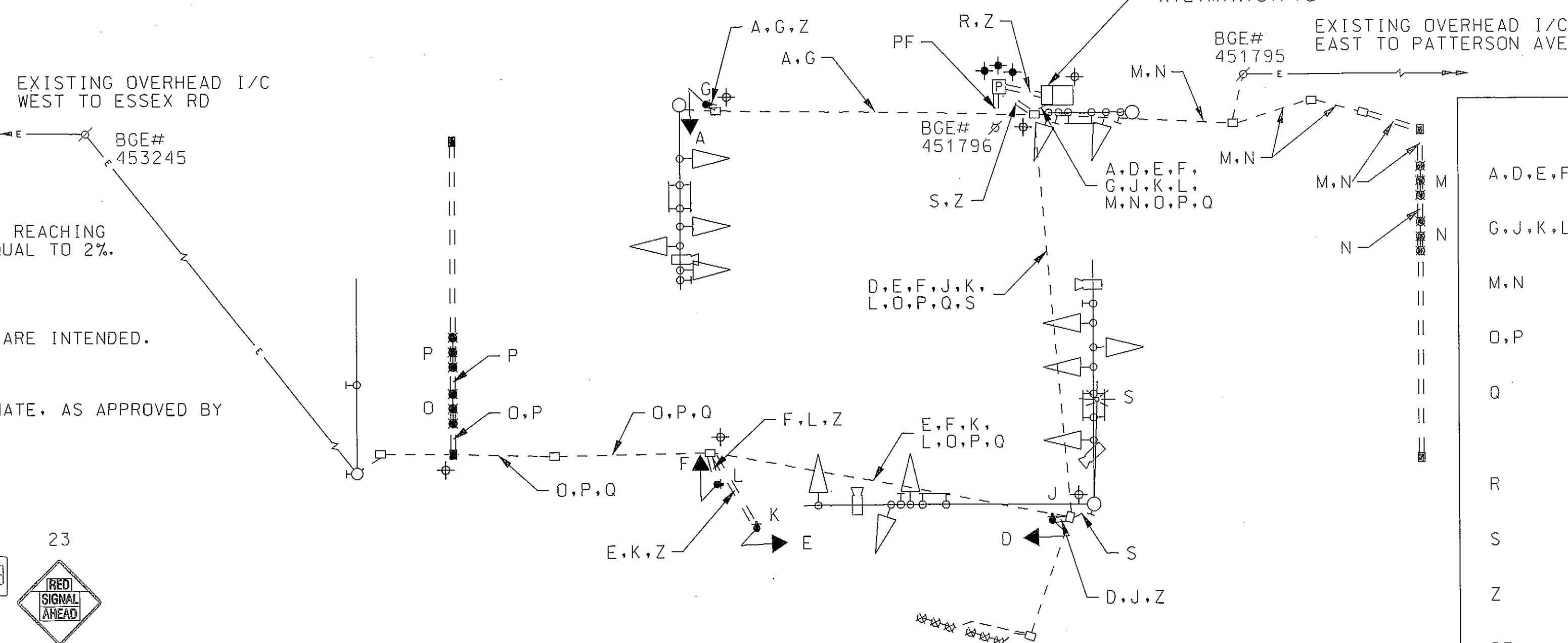
EQUIPMENT LIST "A,B & C"

- A. EQUIPMENT TO BE SUPPLIED BY THE SHA.
- B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR.

ITEM NO.	DESCRIPTION
203030	TEST PIT EXCAVATION
585621	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES
585625	24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES
800000	16 INCH LED COUNTDOWN PEDESTRIAN SIGNAL HEAD
800000	100 AMP EMBEDDED METERED SERVICE PEDESTAL
800000	2-WIRE APS CENTRAL CONTROL UNIT
800000	AUDIBLE / TACTILE PEDESTRIAN PUSHBUTTON STATION & SIGN
800000	DISCONNECT, PULLBACK & REROUTE CABLES
800000	RE-AIM EXISTING VIDEO DETECTION CAMERAS
800000	REMOVE AND DISPOSAL OF EXISTING SIGNAL EQUIPMENT
800000	SHEET ALUMINUM PEDESTRIAN EDUCATION SIGN, R10-3(1) 9"x15" & MOUNTING HARDWARE
800000	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 AWG) TYPE T/C
800000	ADJUST EXISTING HANDHOLE, AND REPLACE FRAME AND COVER
801004	CONCRETE FOR SIGNAL FOUNDATION
802501	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
805125	2 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
805135	3 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
805140	4 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
805150	3 INCH SCHEDULE 80 RIGID PVC CONDUIT - SLOTTED
810601	NONINVASIVE DETECTOR, 500 FOOT LEAD IN CABLE
810605	NONINVASIVE DETECTOR, 1000 FOOT LEAD IN CABLE
811001	FURNISH AND INSTALL ELECTRICAL HANDHOLE
818004	10 FOOT BREAKAWAY PEDESTAL POLE
832017	CABLE - 1 CONDUCTOR, NO 4 AWG, TYPE USE, 600V
861105	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)
861107	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)

UNIT	QUANTITY
CY	2
LF	260
LF	115
EA	4
EA	1
EA	1
EA	4
LF	1290
EA	4
LS	1
EA	4
LF	150
EA	7
CY	1
LF	55
LF	65
LF	15
LF	10
LF	150
EA	2
EA	2
EA	4
EA	4
LF	40
LF	600
LF	620

- C. ALL MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR.



WIRING KEY

A,D,E,F	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
G,J,K,L	2-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
M,N	NON-INVASIVE MICROLOOP PROBE SET WITH 500 FT. LEAD-IN CABLE
O,P	NON-INVASIVE MICROLOOP PROBE SET WITH 1000 FT. LEAD-IN CABLE
Q	DISCONNECT, PULLBACK & REROUTE 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG) & 12-PAIR COMM. CABLE FOR INTERCONNECT
R	1-CONDUCTOR ELECTRICAL CABLE (NO. 4 AWG) 3 RUNS
S	2-CONDUCTOR ELECTRICAL CABLE (NO. 12 AWG) TYPE TC
Z	STRANDED BARE COPPER GROUND WIRE (NO. 6 AWG)
PF	UNDERGROUND POWER FEED BY BGE
⊕	EXISTING GROUND ROD
⊕	PROPOSED GROUND ROD

CONTACT PERSONS FOR DISTRICT #4 ARE AS FOLLOWS:

MS. ERIN KUHN
ASSISTANT DISTRICT ENGINEER - TRAFFIC
PHONE: (410) 229-2381

MR. DONALD SCHAEFER
ASSISTANT DISTRICT ENGINEER - CONSTRUCTION
(410) 229-2421

MR. ANDRE FUTRELL
ASSISTANT DISTRICT ENGINEER - MAINTENANCE
(410) 229-2361

CONTACT PERSONS FOR OOTS ARE AS FOLLOWS:

MR. ROBERT SNYDER
ASSISTANT DIVISION CHIEF
TRAFFIC OPERATIONS
(410) 787-7630

MR. ED RODENHIZER
SIGNAL OPERATIONS MANAGER
(410) 787-7650

MR. EUGENE BAILEY
SIGN OPERATIONS MANAGER
(410) 787-7676



SPECIAL NOTES

APS WILL FUNCTION AS FOLLOWS:

TO CROSS LIBERTY ROAD:

A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT MESSAGE WILL BE "WAIT TO CROSS LIBERTY AT ST. LUKES AND KING JAMES, WAIT."

B. WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

TO CROSS ST. LUKES LANE:

A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT MESSAGE WILL BE "WAIT TO CROSS ST. LUKES AT LIBERTY, WAIT."

B. WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.



STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

MD 26 (LIBERTY ROAD) AT
ST. LUKES LANE & KING JAMES CIRCLE
LOCHEARN, MARYLAND

REVISIONS

GENERAL INFORMATION SHEET

SCALE NONE DATE AUGUST 2012 CONTRACT NO. BA5965177

DESIGNED BY WFW COUNTY BALTIMORE
DRAWN BY WFW LOGMILE 03002609.46
CHECKED BY BUG TIMS NO.
FAP NO. TOD NO.

TS NO. 3828T-G1 DRAWING SP-8 OF 10 SHEET NO. 46 OF 62